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First records of *Lepidophyma zongolicum* García-Vázquez, Canseco-Márquez & Aguilar-López, 2010 (Squamata, Xantusiidae) from Veracruz, Mexico

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Abstract. *Lepidophyma* Duméril, 1851 is the most diverse genus among the nocturnal lizards, with 23 species distributed from the Atlantic and Pacific slopes of Mexico southeast into Panama. Currently, the available information on the ecology and distribution of these species is limited mainly due to their saxicolous habits. Here we present five new state records of *Lepidophyma zongolicum* from Atoyac, a locality in the state of Veracruz, Mexico. These new data expand the geographic range of this species by 48 km from its nearest previously known occurrence.

Keywords. Altas Montañas region, biogeography, geographic range extension, Zongolica Night Lizard

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Introduction

Lepidophyma Duméril, 1851 is the most diverse genus among the night lizard family (Lara-Tufiño and Nieto-Montes de Oca 2021; Grünwald et al. 2023). They are distributed from Nuevo León and Colima along the Atlantic and Pacific slopes, respectively, to southeastern Panama (Noonan et al. 2013; Palacios-Aguilar et al. 2018; Arenas-Moreno et al. 2021; Lara-Tufiño and Nieto-Montes de Oca 2021). These lizards are found in a wide variety of habitats, from xeric scrub to temperate and tropical forests (Bezy and Camarillo-Rangel 2002). Despite the great diversity of habitats and their wide distribution, little is known about *Lepidophyma* lizards, mainly due to their saxicolous habits and their physiological and behavioral requirements (Arenas-Moreno et al. 2018; Muñoz-Nolasco et al. 2019).

Despite this, five new species of *Lepidophyma* have been described since 2010, most known only from their type locality (Garcia-Vazquez et al. 2010; Palacios-Aguilar et al. 2018; Lara-Tufiño and Nieto-Montes de Oca 2021): *L. zongolicum* García-Vázquez, Canseco-Márquez & Aguilar-López, 2010; *L. inagoi* Palacios-Aguilar, Santos-Bibiano & Flores-Villela, 2018; *L. lusca* Arenas-Moreno, Muñoz-Nolasco, Bautista-del Moral, Rodríguez-Miranda, Domínguez-Guerrero & Méndez-de la Cruz, 2021; *L. ramirezi* Lara-Tufiño & Nieto-Montes de Oca, 2021; and *L. jasonjonesi* Grünwald,

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Reyes-Velasco, Ahumada-Carrillo, Montaño-Ruvalcaba, Franz-Chávez, La Forest, Ramírez-Chaparro, Terán-Juárez & Borja-Jiménez, 2023. *Lepidophyma zongolicum* has only been recorded from its type locality on the Atlantic slopes of southeastern Puebla (Tepeyac, municipality of Eloxochitlán), regardless of having been described in 2010 (Garcia-Vazquez et al. 2010). Here, we extend the geographic range of *L. zongolicum* to the east and present the first records of it from Veracruz, Mexico.

Methods

Field surveys were conducted in Atoyac municipality, Veracruz, Mexico, by three of us (AICC, JLCJ, and RAV). The vegetation in this area is made up of tropical semideciduous forests (Acevedo 1988; Rivera-Hernandez 2015). The average annual temperature is 22.8 °C, the maximum mean temperature of the warmest month is 32 °C, the minimum mean temperature of the coldest month is 13.2 °C, and the annual precipitation is 1578 mm. These climatic data were obtained through WorldClim v. 2, with 2.5 minute resolution (Fick and Hijmans 2017).

Collected specimens of *Lepidophyma zongolicum* were euthanized with pentobarbital, fixed with 10% formalin, and preserved in 70% ethanol for permanent storage. The specimens were deposited at the Museo de Zoología, Facultad de Estudios Superiores Zaragoza, Universidad Nacional Autónoma de México. Collecting was conducted under permit FAUT-0093 issued to Daniel Lara-Tufiño by the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT).

The geodetic datum used is WGS84.

Results

***Lepidophyma zongolicum* García-Vázquez, Canseco-Márquez & Aguilar-López, 2010**

Figure 1

New records. MEXICO – **Veracruz** • Atoyac, Antiguo Túnel Ferroviario; 18.9220, –096.7676; 540 m elev.; 06.V.2017; Jorge L. Castillo-Juarez obs.; active, at the exit of a rock tunnel, on limestone; 1 ♂ adult; CNAR-RF 925 (Fig. 1A) • same locality (Fig. 1B); 23.IV.2022; Angel I. Contreras-Calvario & Daniel Lara-Tufiño leg.; inside a stone tunnel, in cracks about 1 cm wide; 2 adults, 2 juveniles; MZFZ-4409–4412 (Fig. 1C).

Identification. The specimens were identified, following the original description (Garcia-Vazquez et al. 2010), by the number of dorsal scales, total femoral pores, number of lateral tubercles, number of small granular tail scales separating the larger ones, number of paravertebral rows, number of foot lamellae, and number of gular scales.

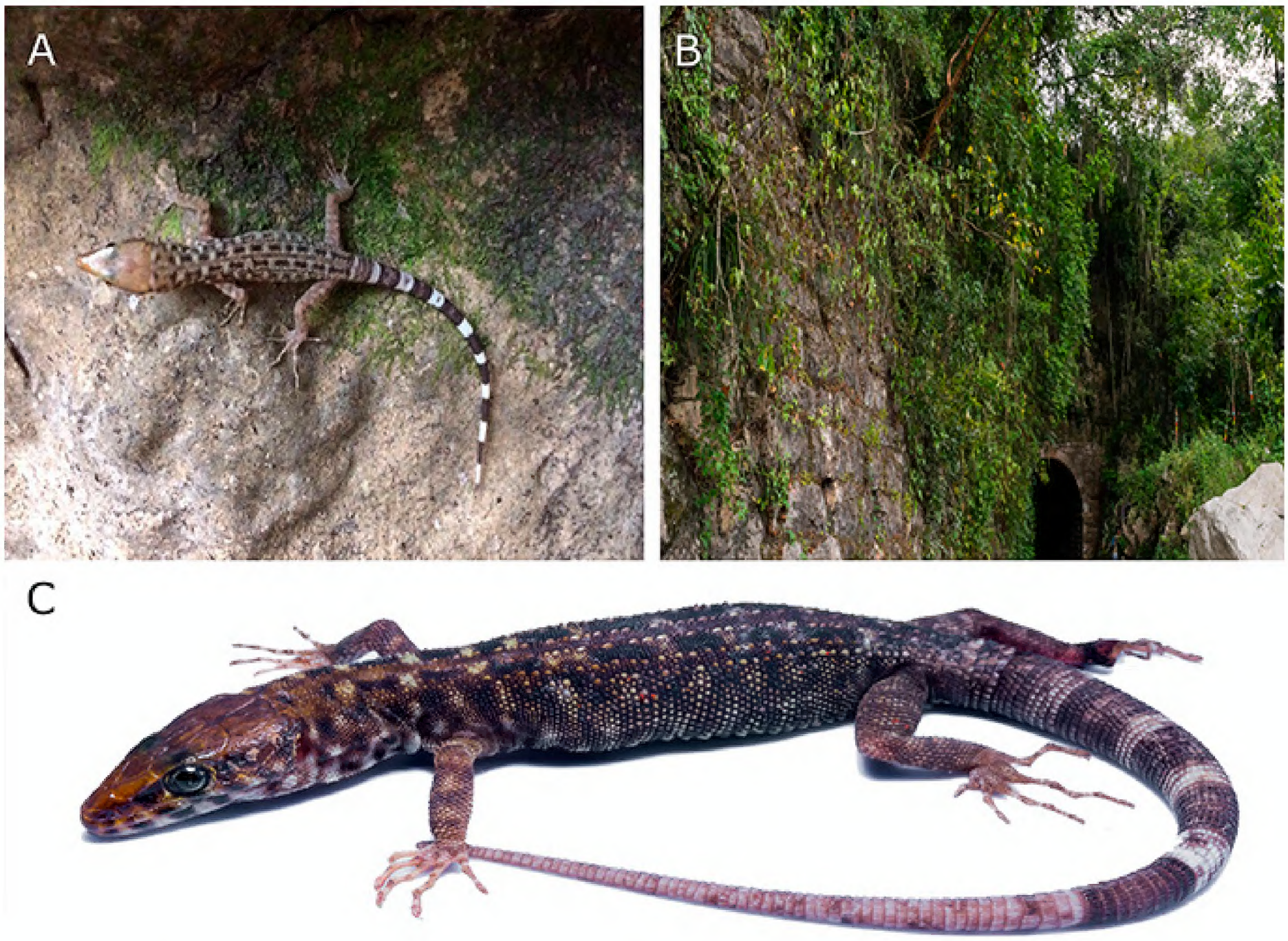

Figure 1. *Lepidophyma zongolicum* and habitat in Atoyac, Veracruz, Mexico. **A.** Adult male. **B.** Habitat of *L. zongolicum* in Veracruz, Mexico. **C.** Adult female. Photographs by JLCJ and RAV.

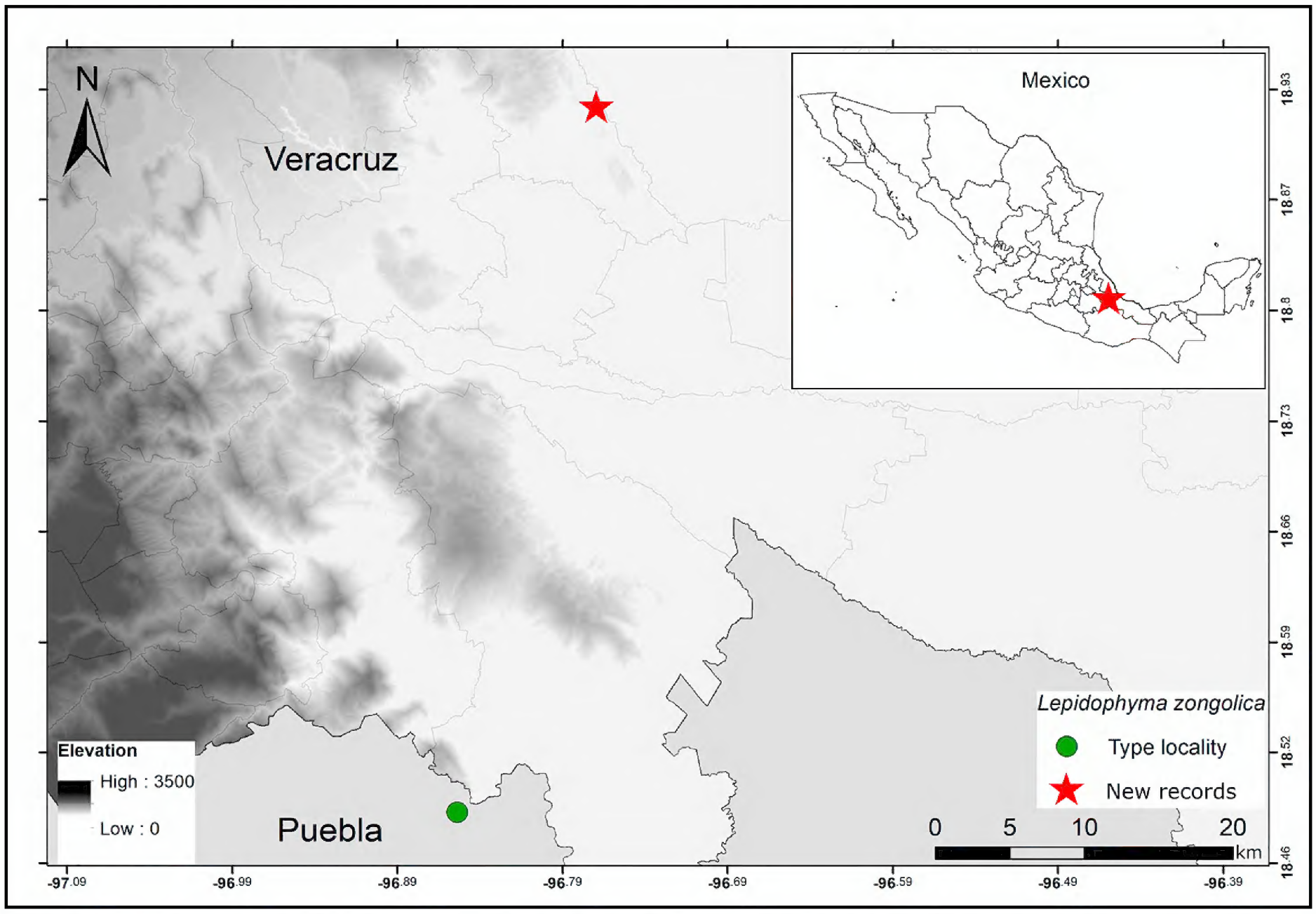

Figure 2. New state records of *Lepidophyma zongolicum* from Veracruz (red star) and previously published locality (green circle) (García-Vázquez et al. 2010).

Discussion

Lepidophyma zongolicum was included by Torres-Hernández et al. (2021) in their list of the herpetofauna of Veracruz, indicating that this species is found in the Sierra Madre Oriental and in the Transverse Mexican Volcanic Axis. However, they did not mention any locality, specimens deposited in scientific collections, or photographs that confirm the presence of this species in Veracruz. Therefore, we consider that the type locality at El Tepeyac, Puebla state, is the only formally recorded locality for this species. Consequently, our record extends the geographic range of *L. zongolicum* by 48 km in a straight line from the nearest known record (Fig. 2).

Nevertheless, our new records suggest that *L. zongolicum* is found in a wide variety of habitats, as mentioned by García-Vázquez et al. (2010). Generating reliable information on the distribution of secretive species, such as *L. zongolicum*, brings with it positive effects such as the study of ecophysiological and demographic requirements, which will ultimately serve as an important tool to know and conserve enigmatic species such as the nocturnal lizards of the genus *Lepidophyma*.

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Author Contributions

Conceptualization: RAV, ABM, AICC. Data curation: AICC, MA, ABM. Formal analysis: ABM, AICC. Funding acquisition: AICC, ABM, JLCJ, MA, RAV. Investigation: ABM, MA, JLCJ, AICC, RAV. Methodology: RAV, AICC, JLCJ. Project administration: AICC. Resources: AICC, JLCJ. Supervision: AICC. Writing – original draft: ABM, AICC, MA. Writing – review and editing: ABM, AICC, MA.

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